

from 4 to 12 percent by weight based on the total weight of the catalyst and magnesium oxide, and

Recovering an effluent stream distillate having an oxygen content of about 1.8 to about 10 percent by weight and a TAN  
5 number less than about 1 mg KOH/g.

Support for amended Claim 35 is found in the Specification, for example at page 7, lines 3 to 13, lines, and line 26 to page 8, line 3, and canceled Claim 34.

#### Claim Rejections - 35 U.S.C. § 102(b)

10 Applicants note with appreciation that Examiner Nguyen has withdrawn rejection of claims 1 and 2 under 35 USC § 102(b) in view of the amendment filed on September 13, 2006.

#### Claim Rejections - 35 U.S.C. § 103(a)

15 In outstanding Office Action, Claims 1 to 8, 10, 11, and 34 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Brownawell et al. (EP-0252 606) in view of Galuszka et al. (USP 5,637,259). Applicants respectfully traverse these rejections.

20 The Brownawell et al. reference of record describes processes for increasing the cetane number of a middle distillate petroleum fraction by contacting the fraction with oxygen or oxidant in the presence of a soluble, non-oxide, metal catalyst, such as oil-soluble cobalt naphthenate, or water-soluble copper sulfate.

25 Those skilled in the art know that oxidation of a petroleum fraction must significantly increase the TAN number of the treated fraction, perhaps to unacceptable high levels. However, no TAN number is reported in the Brownawell et al. reference of record.

It is the position of Applicants that the combination of the Brownawell et al. and the Galuszka et al. references of record, as

relied upon by Examiner, does not suggest Applicants' novel process as recited in instant claims.

5 Most importantly, in contradistinction to the Brownawell et al. reference of record, the oxygen containing species of Applicants' novel invention do not result in effluent distillates having high TAN numbers. More particularly, attention is invited to the present specification, page 7, lines 32 and 33 where Applicants state that "TAN numbers of products made in accordance with the present invention are less than about 2.0, preferably less than  
10 about 1.0 . . ."

In particular, Applicants' process uses a solid oxidation catalyst comprising a preselected combination of Group VII metal component in an amount ranging from 0.1 to 50 percent by weight based on the total weight of the catalyst and a basic support  
15 comprising a member of the group consisting of calcium oxide and magnesium oxide. Effluent from the oxidation step was demonstrated to have the desirable combination of an oxygen content incorporated therein of about 1.8 to about 10 percent by weight and a TAN number less than about 1 mg KOH/g.

20 See, for example, Run No. 42 and Run No. 43 in Table II at page 14 in the Specification which demonstrated the efficacy of Applicants' novel invention to achieve oxygen levels above 1.8 percent by weight, in fact above 2, while controlling TAN numbers to unexpected low levels of less than 1 mg KOH/g.

25 Examiner avers that the argument that Table II in the present specification shows advantages of the invention is not persuasive, "because the evidence does not appear to be commensurate in scope with the claims" (Office communication mailed 11/20/2006, page 4, paragraph prior to Conclusion).

It is the position of Applicants that instant Claims 1 to 8, 10, 11, and 35 are now commensurate in scope with the evidence presented in the specification which shows the advantage of applicants' novel process.

5       Base on the amendments submitted herein, Applicants urge that Claims 1 to 8, 10, 11, and 35, all claims now presented, are in condition for allowance. Applicants respectfully request Examiner Nguyen to pass subject application for allowance.

10       Do not hesitate to contact Frederick S. Jerome whose telephone number is (630) 832-7974 (FAX (630) 832-7976) if additional assistance is needed regarding this paper or earlier papers for Applicants.

Applicants and their undersigned Attorney appreciate Examiner's attention and further consideration of this matter.

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Respectfully submitted,



Frederick S. Jerome  
Attorney For The Applicants  
Registration Number 28,621  
(630) 832-7974  
(630) 832-7976 FAX

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25   Correspondence Address:

Customer No. 04249